

**ABSTRACT**

A system using tank corrosion sensors to provide for an overall assessment and monitoring of the electro-chemical corrosion and coatings condition in ships' tanks, and particularly in ships' seawater or compensated fuel tanks. The system includes reference half-cells mounted along a suspended cable and one instrumented sacrificial anode at the end of the cable to provide optimal sensing capability within a tank structure. The reference half-cells and the sacrificial anode measure a potential and current output, respectively. Together the measurements provide objective information that can be used to predict corrosion damage and coating deterioration occurring throughout the structure of the tank. The system may be used for an overall assessment and monitoring of the electro-chemical corrosion and coatings condition.. In a preferred embodiment, the measurements are stored in a datalogger that is optimally contained within an associated instrument housing. If used with other systems in other tanks, the system may be used to monitor the relative tank condition, trend tank condition changes over time, range tank behavior into three categories and provide a direct analysis methodology for making tank maintenance decisions.